ABSTRACT

A system and method for remotely controlling an increased number of subsystems having an onboard locomotive control unit (LCU) and two associated operator control units (OCUs) on a single wireless channel. A time slot is assigned to each subsystem for making two-way transmissions to control the locomotive. A signal from an external timing source synchronizes each subsystem to minimize interference between transmissions from different subsystems. Time slots are assigned manually or automatically over a wireless network or by the LCU after monitoring the channel. The LCU automatically selects the direct or repeater transmission path depending upon whether or not it receives polling message responses from its associated OCUs. A GPS receiver in each subsystem receives the synchronization signal and provides geographic positioning data so the LCU can determine when to execute predefined, position-based commands. The secondary OCU may be turned off and rejoined to the subsystem without ceasing operation.